

Remarks

Applicants have reviewed this Application in light of the Office Action sent 11 February 2008. Applicants have made clarifying amendments to Claims 1-24. Applicants respectfully request reconsideration and allowance of all pending claims.

Claims 1-8 are Definite

The Examiner rejects Claims 1-8 as being indefinite. Specifically, the Examiner states, “The limitation ‘determining an unallocated subset from a plurality of HPC nodes’ is ambiguous because it mentally indicates an aspect rather than physically points out a subject matter.” To expedite issuance of a patent from this Application, Applicants have made clarifying amendments to Claims 1-8. Applicants respectfully request reconsideration and allowance of Claims 1-8.

Claims 9-24 are Definite

The Examiner similarly rejects Claims 9-24 as being indefinite. To expedite issuance of a patent from this Application, Applicants have made clarifying amendments to Claims 9-24. Applicants respectfully request reconsideration and allowance of Claims 9-24.

Claims 9-16 are Definite

The Examiner rejects Claims 9-16 as being indefinite. Specifically, the Examiner states, “Claims 9-16 added newly limitation, ‘Software embodied in one or more tangible computer-readable media.’ However, this limitation is inconsistent or insufficient antecedent basis to the description in specification. Accordingly, this recitation is indefinite.” Applicants respectfully disagree with the Examiner.

The Specification provides consistent and sufficient support for *software embodied in one or more tangible computer-readable media*, as independent Claim 9 recites. As an example, and not by way of limitation, the Specification describes:

Cluster management engine 130 could include any hardware, software, firmware, or combination thereof operable to dynamically allocate and manage nodes 115 and execute job 150 using nodes 115. For example, cluster management engine 130 may be written or described in any appropriate computer language including C, C++, Java, Visual Basic, assembler, any suitable version of 4GL, and others or any combination thereof. It will be understood that while cluster management engine 130 is illustrated in FIGURE 1 as a single multi-tasked module, the features and functionality performed by this engine may be performed by multiple modules such as, for example, a physical layer module, a virtual layer module, a job scheduler, and a presentation engine (as shown in more detail in FIGURE 5). Further, while illustrated as external to management node 105, management node 105 typically executes one or more processes associated with cluster management engine 130 and may store cluster management engine 130. Moreover, cluster management engine 130 may be a child or sub-module of another software module without departing from the scope of this disclosure. Therefore, cluster management engine 130 comprises one or more software modules operable to intelligently manage nodes 115 and jobs 150.

(Specification, Page 10, Line 25, through Page 11, Line 17).

For at least these reasons, *software embodied in one or more tangible computer-readable media*, as independent Claim 9 recites, is definite. Applicants respectfully request reconsideration and allowance of Claims 9-16.

Claims 1-24 are Definite

The examiner rejects Claims 1-24 as indefinite. Specifically, the Examiner states, “The limitation, ‘each of unallocated HPC nodes comprises an integrated fabric’ remains being indefinite because the meaning of the claim is vague and it does not clearly point out a claimed subject matter.” To expedite issuance of a patent from this Application, Applicants have made clarifying amendments to Claims 1-24. Applicants respectfully request reconsideration and allowance of Claims 1-24.

Claims 9-16 Recite Patentable Subject Matter

The Examiner rejects Claims 9-16 as being directed to nonstatutory subject matter. Specifically, the Examiner states, “Claims 9-16 recites software embodied in one or more tangible computer-readable media. Using the term, ‘tangible computer-readable media,’ which is not defined in the specification, would cover non-statutory subject matter such as air or wireless media. Therefore, the claims do not meet the statutory requirement because it includes an abstract idea.” Applicants respectfully disagree with the Examiner.

Independent Claim 9 recites *software embodied in one or more tangible computer-readable media and when executed operable to* perform certain recited functions. Applicants respectfully submit that software that is *embodied in one or more tangible media* necessarily excludes the air medium, as the air medium is not *tangible*, as independent Claim 9 recites. Moreover, as Applicants discuss above, Applicants respectfully submit that the Specification provides sufficient description of *software embodied in one or more tangible computer-readable media*, as independent Claim 9 recites, to define the same.

For at least these reasons, Claims 9-16 recite patentable subject matter. Applicants respectfully request reconsideration and allowance of Claims 9-16.

Claims 17-24 Recite Patentable Subject Matter

The Examiner rejects Claims 17-24 as being directed to nonstatutory subject matter. Specifically, the Examiner states, “Claims 17-24 recites a ‘system’ which comprises ‘nodes.’ A node comprises an ‘integrated fabric.’ There is no link to a physical system. The Claims thus merely recite a program or data structural per se.” Although Applicants do not completely understand this rejection of Claims 17-24, Applicants have made clarifying amendments to Claims 17-24 to expedite issuance of a patent from this Application. Applicants respectfully request reconsideration and allowance of Claims 17-24.

Independent Claims 1, 9, and 17 are Allowable Over *Keller*

The Examiner rejects independent Claims 1, 9, and 17 under 35 U.S.C. § 102(a) as being anticipated by Hovestadt, Kao, Keller, and Streit, *Scheduling in HPC Resource Management Systems: Queuing vs. Planning*, PROCEEDINGS OF THE 9TH WORKSHOP ON JOB SCHEDULING STRATEGIES FOR PARALLEL PROCESSING (“*Keller*”).

Keller merely discloses a resource management system (RMS) for high performance computing (HPC) machines that closes a gap between the RMS and grid middleware. (Page 1). The RMS in *Keller* provides knowledge about start times of all requests in the system, making advanced reservations implicitly possible. (Page 2).

In contrast, independent Claim 1, as amended, recites:

A method comprising:
determining an original subset of a plurality of nodes, the original subset comprising nodes currently unallocated to a job, each node in the plurality of nodes comprising a switching fabric integrated to a card and at least two processors integrated to the card;
selecting a job from a job queue; and
executing the selected job using at least a portion of the original subset.

Independent Claims 9 and 17 are similar to independent Claim 1.

Keller fails to disclose, teach, or suggest each and every limitation of independent Claim 1. As an example, *Keller* fails to disclose, teach, or suggest ***determining an original subset of a plurality of nodes, the original subset comprising nodes currently unallocated to a job, each node in the plurality of nodes comprising a switching fabric integrated to a card and at least two processors integrated to the card***, as independent Claim 1 recites. Even assuming for the sake of argument that the HPC machines in *Keller* could be properly considered ***a plurality of nodes***, as independent Claim 1 recites, *Keller* would still fail to disclose, teach, or suggest any of

the HPC machines in *Keller comprising a switching fabric integrated to a card and at least two processors integrated to the card*, as independent Claim 1 recites.

“To anticipate, every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim.” *Brown v. 3M*, 265 F.3d 1349, 1351 (Fed. Cir. 2001). “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987); M.P.E.P. ch. 2131 (Rev. 3, Aug. 2005) (quoting *Verdegaal*, 814 F.2d at 631). Moreover, “[t]he identical invention must be shown in as complete detail as is contained in the patent claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989); M.P.E.P. ch. 2131 (Rev. 3, Aug. 2005) (quoting *Richardson*, 868 F.2d at 1236). Furthermore, “[t]he elements must be arranged as required by the claim.” M.P.E.P. ch. 2131 (Rev. 3, Aug. 2005) (citing *In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990)). As shown above, *Keller* fails to disclose, either expressly or inherently, each and every limitation of independent Claim 1. Therefore, *Keller* does not anticipate independent Claim 1 under governing Federal Circuit case law and the M.P.E.P.

For at least the reasons above, Applicants respectfully request reconsideration and allowance of independent Claims 1, 9, and 17 and all their dependent claims.


Conclusion

For at least the foregoing reasons, Applicants respectfully request allowance of all pending claims.

If a telephone conference would advance prosecution of this Application, the Examiner may call Travis W. Thomas, Attorney for Applicants, at 650.739.7503.

Please charge \$810.00 for the Request for Continued Examination accompanying this Response and \$1050.00 for a three-month extension of time to Deposit Account No. 02-0384 of Baker Botts LLP. The Commission may charge any fee due and credit any overpayment to Deposit Account No. 02-0384 of Baker Botts LLP.

Respectfully submitted,
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A handwritten signature in black ink, appearing to be 'T-T' followed by a horizontal line.

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